

14.0 BASIC FUNCTIONALITY IN COMMON SUPPORT APPLICATIONS

This section describes basic user interface functionality that should be available in a variety of common support applications. These specifications are provided to assist in “best of breed” selections and are not included in the UIS checklist.

14.1 WORD PROCESSING

The primary window in a word processing application is wide enough to display an entire line of text without having to scroll the window horizontally. The window provides scroll bars for scrolling vertically through the document, and a standard location (e.g., the message bar of the window) where users can determine their current location within the document (e.g., current page number).

Users can save, access, retrieve, and rename text documents as well as print the document. Users can specify the format of a document (e.g., margins, tabs) and select the font type, size, and style (e.g., bold, italics) for text. Automatic line break, word wrap, and automatic pagination, with page numbers based on the number entered by users, are available. The text that is displayed in the window is either formatted to reflect how the document will appear when printed, or users have the option to display the text in this format before printing the document. A copy of the original document file is retained until users confirm that it is to be changed; the file is not modified automatically as users make each editing change.

The application provides both search and search/replace capabilities for users. In the former case, users type the text string to be searched, and the application locates and highlights the first instance of the string in the text. In the latter case, users type both the text string to be searched and the text string to which it is to be changed. Users have the option for the search to be either case-sensitive or case-insensitive.

14.2 GRAPHICS

The primary window in a graphics application includes a palette of drawing tools to support efficient manipulation of objects by users. Users can select and edit the attributes of objects (e.g., color, line thickness, font size), change object sizes (enlarge or reduce), and fill the object with colors or patterns. The application automatically aligns objects to an invisible rule or grid structure, completes figures (e.g., closure of a polygon), and draws lines between user-specified points. Object selection and transfer methods (e.g., drag and drop) are available and implemented according to specifications presented in this style guide.

Users can draw objects such as lines, rectangles, ovals, and arcs; these objects are displayed as they are drawn and are easy to reposition, duplicate, and delete. Users can group separate objects into a single object (e.g., combine text and a rectangle into a complex object). The objects that are displayed in the window are either formatted to reflect how they will appear when printed, or users are provided with an option to display the objects in this format before printing them. A copy of the original graphics is retained until users confirm that the objects are to be changed; the objects are not modified automatically as users change them.

14.3 BRIEFING SUPPORT

The primary window in a briefing support application contains a display area for viewing and editing the slides in a briefing, and a set of text, drawing, and graphing tools in the form of a palette to create and manipulate objects on a slide. The window may also include an icon bar for quick access to commonly used commands for slide manipulation (e.g., to select font and color scheme, to change view scales). The window includes the name of the briefing and displays the current slide number in a

standard location (e.g., the message bar of the window). The window provides vertical and horizontal scroll bars for viewing the content of the display area when entire slide does not fit in the window.

Graphic manipulation features available in the application include the ability to edit objects (e.g., cut, copy, paste, duplicate, delete), change the attributes of an object (e.g., fill, line, shadow) and the order of objects in a stack, move an object by dragging it, and group objects together to create another object. Word processing features include access to multiple fonts and type sizes, spellchecking, and search/replace. Users can select the color schemes used in each slide, including the colors for the slide background, lines and text, shadows, title text, fills, and accents.

When creating a set of briefing slides, users can specify global features (e.g., font, color scheme, graphic template) for the briefing as a whole and modify these settings for individual slides as desired. Users can import text and graphics from other sources, incorporate clip art, animation, and video as part of the briefing, and do screen captures (e.g., from the tactical display) and annotate them with text and other graphics as overlays.

Users can create a file containing each set of slides (i.e., briefing). The file content includes the individual slides in the briefing as well as the order in which they are displayed. Users are able to reorder, add, and delete slides and then save the result; they are also able to select and copy multiple slides to re-use in the current briefing or to paste into another briefing. Users can access, retrieve, and rename the briefings they have created as well as print some or all of the slides in a briefing.

The application includes an option for presenting a slide show (i.e., displaying the slides in a briefing so that they fill the screen and all of the tools, menus, and other screen elements are hidden). Users can select all or some of the slides for presentation as well as specify the slide advance, sequence, timing, and transitions for the presentation. When the slides are displayed in a presentation, all of them have the same output size, aspect ratio, and orientation (i.e., all horizontal or all vertical). As users give the presentation, they can use the keyboard or the pointing device to move between slides, stop and restart an automatic show, temporarily blank the screen, and end the show. If the pointer remains visible during the presentation, users can move it with the pointing device and use it to point to and draw on the slides.

14.4 MESSAGE HANDLING

An application supporting the preparation of military messages provides preformatted templates that conform to standard message formats; when users enter the text of a message, format control is automatic. Users can specify the data to be transmitted in the message, incorporate existing file data (including other messages received or transmitted) if desired, and save the message during preparation and upon completion. Users are provided with a basic set of message header fields and supported whenever possible in specifying the message address. For example, limited sets of frequently used terms (e.g., classification level) are available for selection, and the appropriate addressee(s) are provided automatically when replying to a message. Users can build and maintain distribution lists of commonly used addresses and select from these lists (without having to reenter the information) when addressing messages. The address is checked for accuracy prior to transmission, with users prompted to correct any errors before the message is sent.

The application minimizes the number of user actions required to transmit a message. Users can initiate message transmission directly (e.g., by selecting a Send push button). If a message cannot be sent immediately, it is queued automatically so that users do not have to actively monitor the transmission, and undelivered messages are saved in the event of transmission failure. Users can assign message priorities and cancel or abort a transmission that has not been completed. Feedback is available on status of message transmission, confirming that messages have been sent and indicating when transmission failures occur. Users can specify what feedback they want to receive, and an automatic log of this information is maintained.

The application informs users when high priority messages are received. For example, when users log on to the system, the application provides users with a list of new messages received since they last accessed the system. In addition, during a session, the application displays an alert message on the screen to inform users of priority messages. Message notification does not interfere with ongoing system use but provides some indication of urgency if the messages have different degrees of priority.

The application automatically queues incoming messages by time of receipt and message priority and maintains logs of this information. Users can review summary information on messages that have been queued, display individual messages, save/file the ones of interest, and discard those that are unwanted. When a message is displayed, it appears in a text window, and users are able to scroll, save, and print it as they would any other text document.

14.5 IMAGERY

The primary window in an imagery application contains an imagery display area and a set of tools for manipulating the image. These tools may be presented in the form of a palette or available as sets of controls grouped according to the nature of the operation performed. The window includes identifying information about the image currently displayed, presented in a standard location (e.g., the message bar) in the window. The window provides options (e.g., vertical and horizontal scroll bars, roam and zoom functions) for viewing the content of the display area when entire image does not fit in the window.

Users can access and retrieve an image for display from a directory of images. Users can either specify the name of the image or search the directory for images matching user-defined criteria, including wildcard searches. Users are able to print (in full-resolution or low-resolution) the image currently displayed in the window.

The application provides access to a number of basic image exploitation functions. Users can roam the image (similar to panning in a map window) in both horizontal and vertical directions. Automatic, jump, manual, and patterned roam control are available, with users specifying the rate, direction, and area of interest as appropriate. As users roam an image, they can tag specific areas of interest for later recall while the image remains in the display area. Users can zoom an image, either in predefined steps or in increments they specify. Image chipping (i.e., allowing users to select and designate regions of an image for storage) is also supported. Finally, users can create and manipulate annotations to display with an image. Annotations include text, lines, icons, geometric shapes, colors, and patterns. In each case, users are able to edit, delete, reposition, resize, save, and retrieve the annotation without altering the underlying imagery data. In addition, when users manipulate (e.g., rescale) the image, the scale and orientation of the annotations are adjusted to accommodate the changes.

The application supports imagery-unique operations, including image enhancement filtering capabilities and allowing users to control the dynamic range of image data by modification of intensity and contrast. Users can select and then examine (e.g., zoom, roam) a region of interest within an image, leaving the remainder of the image unaffected. If desired, users can apply the region to the entire image. The application provides mensuration functions (for computing lengths, areas, and volumes from dimensions or angles) and performs isotropic pixel correction (i.e., converts rectangular pixels to square pixels for display purposes). Finally, users are able to create a mirror view of the image so they can adjust the image if the negative was inverted when scanned.

The application provides advanced functions for viewing geo-referenced images, including a default image rotation where “up is up” (i.e., vertical objects are oriented toward the top of the window), an automatic north rotation (i.e., with North orientated at the top of the window), and interactive rotation in user-defined increments. In addition, annotation capabilities are extended so that when users

manipulate the image, the scale and orientation of the annotations are adjusted according to the type or nature of the symbol (e.g., icons do not change size but text does).

Users can plot user-selected geographic data on the image, including frame-by-frame plotting to animate the data in either a forward or reverse time direction. With respect to image fusion operations, users can register (i.e., transform an image so that it aligns with either another image or a map projection) geo-referenced images acquired from the same or different sensors and display them together.

Users can perform concurrent geometric manipulations on separate geo-referenced windows that have overlapping geographic coverage. They are able to “slave” together multiple geo-referenced windows and manipulate (e.g., roam, zoom, rotate) all the slaved windows concurrently and relatively (i.e., with the window centers maintained at a common center lat/long position, despite differences in the amount and distance coverage between windows).